CALFED Bay-Delta Program Project Information Form

Watershed Program - Full Proposal Cover Sheet

Attach to the cover of full proposal. All applicants must fill out this Information Form for their proposal. Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.

1. Full Proposal Title: Sonoma Creek Watershed Conservancy: Outreach and Restoration
   Concept Proposal Title/Number: same title, WSP01-0082

   Applicant and Fiscal Agent: Sonoma Ecology Center

Lead applicant for the Sonoma Creek Watershed Conservancy.
205 First Street West, Sonoma, CA 95476
Telephone: (707) 996-9744
Fax: (707) 996-1744
Email: sec@vom.com

2. Type of Project: Indicate the primary topic for which you are applying (check only one)

   Assessment
   ✓ Capacity Building
   _____Outreach
   Education
   _____Planning
   Implementation
   _____Research

   ***Please note**: proposed project is intentionally broad and includes tasks in each of these topics*.

3. Type of Applicant:

   ✓ Non-Profit
   Academic Institution/University
   Federal Agency
   _____Private party
   Joint Venture
   _____State Agency
   Local Government
   _____Tribe or Tribal Government

4. Location (including County):

   Sonoma Creek watershed, Sonoma County,
   drains to San Pablo/San Francisco Bay.
   Project includes site-specific tasks and watershed-wide tasks.

What major watershed is the project primarily located in:

Klamath River (Coast and Cascade Ranges)
Sacramento River (Coast, Cascade and Sierra Ranges)
San Joaquin River (Coast and Sierra Ranges)
✓ Bay-Delta (Coast and Sierra Ranges)
Southern CA (Coast and Sierra Ranges)
Tulare Basin (Coast, Sierra and Tehachapi Ranges)

5. Amount of funding requested: $270,541
Cost share/in-kind partners? Yes

	Contributor	Source	Amount	Status
Task 1	SEC	memberships, donations, other grants	40,000	expected
Task 2	SVVGA	dues	90,000	expected
	SEC	EPA Region IX	13,000	committed
	SEC	volunteers, in-kind expertise	5,000	expected
	SSCRCD	Army Corps of Engineers	100,000	committed
	SSCRCD	California Coastal Conservancy	60,000	committed
	Conservancy	Proposition 13 (SWRCB)	250,000	will apply 2001
Task 3	SEC	DFG or Sonoma County Water Agency	20,000	will apply 2001
Task 4	SCAAW	DFG	22,000	committed
Task 7	SEC	City of Sonoma	10,000	committed
	SEC	volunteers, in-kind expertise	5,000	expected
Total:			615,000	

6. Have you received funding from CALFED before? Yes

Previous CALFED funding for the Sonoma Creek Watershed Conservancy came through the Ecosystem Restoration Program, with Southern Sonoma County Resource Conservation District as lead applicant. We are applying now to the Watershed Program because our watershed has needs for education, coordination, and outreach that the Watershed Program is more suited to.

- Sonoma Creek Watershed Conservancy, Watershed Restoration Program (1998-E02). Environmental Protection Agency funds via Ecosystem Restoration Program
- Sonoma Creek Watershed Conservancy (2000-E04). National Fish and Wildlife Foundation funds via Ecosystem Restoration Program
- Sonoma Creek Watershed Conservancy, 2001-2003 (2001). National Fish and Wildlife Foundation funds via Ecosystem Restoration Program

Previous CALFED funding for Sonoma Ecology Center, lead applicant for Team Arundo del Norte.

- *Arundo donax* Eradication and Coordination (2000, USFWS #11332-0-J033). US Fish and Wildlife Service funds via Ecosystem Restoration Program.

By signing below, the applicant declares the following:

1. The truthfulness of all representations in their proposal
2. The individual signing this form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or an organization)
3. The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the Watershed Program Proposal Solicitation Package and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent provided in the Proposal Solicitation Package.

Richard Dale, Executive Director, Sonoma Ecology Center
Printed name of applicant

Signature of applicant

Sonoma Creek Watershed Conservancy: Outreach and Restoration

A Proposal to the CALFED Watershed Program, April 2001

1. Project Description

This three-year project addresses needs in Sonoma Valley for community dialogue, assessment of at-risk species, and restoration at high-priority sites. It will allow the watershed community to engage fully in two beneficial yet controversial agency initiatives, and continue assessment and recovery of the watershed's steelhead population. Proposed tasks will expand the Sonoma Creek Watershed Conservancy's efforts to inform and engage the public in watershed issues while providing critical data for adaptive management.

The proposed project continues the work of the Conservancy. This collaborative alliance of stakeholder groups has a 5 year record of successful watershed planning, education, and implementation work, including work funded by three previous CALFED grants. The Conservancy currently consists of Sonoma Ecology Center (SEC), Southern Sonoma County Resource Conservation District (SSCRCD), Sonoma Valley Vintners and Growers Alliance (SVVGA), Sonoma Creek Adopt-A-Watershed (SCAAW), San Francisco Estuary Institute (SFEI), and supporting and funding entities: EPA Region IX, San Francisco Regional Water Quality Control Board, California Coastal Conservancy, California Department of Fish & Game, US Army Corps of Engineers, and others. The Conservancy's work is backed by extensive scientific and technical review from inside and outside the partners' organizations. Funds will expand the Conservancy's existing efforts to inform and engage the public in watershed issues, and create durable improvements to populations of at-risk species, both in Sonoma Creek and the San Pablo Bay.

Task 1. Administration

Task 2. Public outreach, education, and participation. Two beneficial yet controversial agency initiatives face the Sonoma Valley community, and funds are needed to allow the watershed community to engage fully with these efforts. The initiatives are: a US Army Corps of Engineers / SSCRCD project to reduce flooding and restore floodplains in the lower watershed, and a partnership with the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the Conservancy to develop one of the West's first community-led TMDLs for sediment. See support letter from RWQCB.

The Conservancy will continue to provide a needed meeting-place for agricultural, environmental, scientific, residential, educational, and governmental sectors in Sonoma Valley. We will 1) expand the current Conservancy membership to include county and city agencies, individual landowners, and more interest groups; 2) hold public meetings where diverse community interests can meet and better understand each other; 3) emphasize communication and open decision-making processes, using newsletters, press releases, and small meetings with landowners and community groups; 4) request project review by technical experts and affected community parties (e.g. downstream residents); 5) publicly present GIS maps and technical data; and 6) expand current outreach practices such as Conservancy partners serving on each other's Boards of Directors. SSCRCD is the local sponsor for the Corps project, and SEC will be a partner in technical and outreach activities. SEC is the local technical partner for TMDL development, and SSCRCD and SVVGA will be active in outreach to their communities. RCD, SVVGA, SEC.

Task 3. Steelhead population assessment. Sonoma Creek once had an internationally known steelhead fishery, but land use impacts have greatly diminished the population of this indicator species. Planning to restore a self-sustaining steelhead population requires an assessment of the locations, age distribution, and year-to-year survival rates of the existing population. There has never been a population study in the watershed. Funding would support two years of a three-year study, following methods described in a study plan by Entrix, Inc., of Walnut Creek. SEC lead.

Task 4. Environmental education for primary classes. Sonoma Creek Adopt-A-Watershed provides environmental education services to classroom teachers, including curriculum training, organizing educational restoration workdays for children, guest teaching, leading walks, planting a demonstration xeriscape garden, and building long-term relationships between classes and particular sites. These services begin the indispensable task of teaching young students concepts such as land use change and the value of riparian and aquatic habitats. SCAAW lead.

Task 5. Fish passage, Rodgers Creek. Approximately 4 miles of high-quality steelhead habitat are blocked by a barrier in this tributary to Sonoma Creek. We will likely use boulder weirs to form a step pool structure to allow fish to pass the barrier. Planning and permitting phase only. RCD lead.

Task 6. Bank stabilization, Carriger Creek. Long-term land use practices have caused severe degradation in a 1000-foot stretch of this otherwise highly productive steelhead stream. Using geomorphological expertise from SFEI, and building on a CALFED-funded study of the stream, we will follow a modified Rosgen methodology to characterize this reach and design a stabilization/restoration project. Planning and permitting phase only. RCD, SFEI.

Task 7. Nathanson Creek Preserve and Trailway restoration planning. Over the last six years, community members, SEC, City of Sonoma, Sonoma Valley Unified School District, the Sonoma County Agricultural Preservation and Open Space District, and others have been developing a ¾ mile urban greenway in the City of Sonoma on a steelhead stream. Despite great public interest in the project, it is stalled pending a comprehensive restoration plan. We will develop a plan in collaboration with the schools and other landowners in the project reach and local technical experts and scientists, many of whom will donate their services. The plan will emphasize invasive species control, controlling access to the streambed, biotechnical engineering practices, integrating the project into school activities, and phased implementation to allow time for community participation. Planning and permitting phase only. SEC lead.

Task 8. Reports and Presentations We will comply with contractual requirements in reporting and making presentations to CALFED. We will share results and data with other audiences as discussed in 5b and 5e.

1a. Assumptions Underlying Proposal

The Sonoma Creek watershed, and San Pablo Bay downstream of it, have been transformed by human impacts, from a pre-European condition with large floodplains and riparian corridors to one with extensive agriculture and increasing urbanization. The region has a history of loss of riparian and SRA habitat, and connectivity of those habitats. Culverts and roads interrupt steelhead migration. A number of plant and animal species are listed as threatened or endangered. Sonoma Creek is listed as impaired by sediment, pathogens, and nutrients (State Water Resources Control Board's Impaired Waterbodies 303(d) list). The San Pablo Bay, critical to all anadromous species that use the Delta, suffers from altered quality, quantity, and timing of water, sediment, and nutrients.

Despite this history, Sonoma Valley remains an unusually intact ecosystem relative to the rest of the Bay-Delta watershed. The watershed has no dams, supports a diverse native fish community, and has a high level of public awareness to support restoration. Much of the watershed is in a more-or-less natural state. Primary land uses are viticulture, rural residential, and small but growing urban areas. Directing resources to relatively healthy watersheds in the North Bay is a highly efficient way to leverage limited funding for maximum benefit to the entire CALFED area (Robert Leidy, EPA, speech at 1999 State of the Estuary Conference, San Francisco).

1b. Expected Outcomes

Conservancy activities improve habitat for steelhead, California freshwater shrimp, and other aquatic and riparian species in the watershed, and enhance habitat values in San Pablo Bay to benefit all Bay-Delta

anadromous species. This project will expand the Conservancy's existing efforts to inform and engage the public in watershed issues, provide criticial data for adaptive management, and creat durable improvements to populations of at-risk species in Sonoma Valley and San Pablo Bay.

All tasks will produce progress reports and final reports, and receive coverage in Conservancy and SEC newsletters, on websites of the Conservancy and its partners, in local press, and other outlets detailed in 4b, 5b, and 6b. Additional outcomes and deliverables are listed below by task.

Task 2: Greater community awareness, involvement, and buy-in for TMDL development and restorative flood control solutions for the lower watershed. Increased awareness of watershed functions and effects of past and current land uses. Increased influence by the community on regulatory and restoration actions. Greater durability and acceptability of agency actions.

Task 3: Essential data for management of the watershed's key indicator species—steelhead. See 5e for more details. Final results of the steelhead population assessment will not be available during this grant's life. However, interim results will be reported in narrative and map form.

Task 4: Continued presence of SCAAW in our schools. Improved environmental awareness of teachers and young people, building an informed watershed citizenry. Deliverables: reports of activities, numbers of children and teachers participating in events.

Tasks 5-7: Clear, fundable plans for restoration actions at Nathanson, Carriger, and Rodgers Creeks. These actions will remove barriers to steelhead passage and improve habitat values for steelhead, endangered California freshwater shrimp, and riparian-dependent species. Deliverables: restoration plans, engineering drawings, and permits.

Task 8: Results and data shared with many audiences as discussed in 5b and 5e.

1c. Timetable for Completion

Our funding request is for three years. Several of the proposed tasks are long-term, phased projects or programs that have a past history and will extend beyond the grant's life. See 8 for a timetable.

1d. General Methodology

Conservancy tasks work to understand and improve watershed conditions and improve information feedback, so that the community and its government representatives can improve land use practices. Locally responsive watershed management requires an informed community working amicably with relevant agencies and governments to assure that both local desires and broader environmental mandates are satisfied. This project provides the information and the forums that the community needs to guide agency-initiated programs, and strengthens existing liaisons between the community on the one hand, and governments and agencies on the other hand. We work to empower the community to learn from and influence major actions affecting their property and the watershed in general.

The Conservancy engenders support through its proven commitment to involving diverse community interests.

Conservancy tasks relate to one general hypothesis: if we educate the community about watershed conditions and how to improve them, assess watershed conditions, address identified stressors and limiting factors, and restore and maintain key habitats, we will improve fisheries and watershed health in Sonoma Valley and San Pablo Bay. Specific tasks respond to varying needs in the watershed: 1) We propose community outreach and capacity-building when agency-driven initiatives stimulate active local participation. 2) We propose assessments in areas of uncertainty such as steelhead population status. Progress toward achieving better water quality, ecosystem restoration, and steelhead viability must be measured against some baseline condition. Baseline data are limited. 3) We propose implementation projects where cause-and-effect relationships are more clear.

2. Qualifications and Readiness

2a. Institutional

The Sonoma Creek Watershed Conservancy is a collaborative alliance with 5 years of successful watershed planning and implementation work, including work funded by three CALFED grants. The Conservancy is committed to fostering understanding among diverse interests and increasing local input on decisions affecting the watershed. Our work is backed by technical review from inside and outside the partners' organizations. Past efforts have proven successful in communicating the vision of restoration and stewardship and involving various sectors of the community in specific projects. The achievements gained in both the natural and human communities from past watershed projects have given the Conservancy credibility and allowed it to be strongly supported by state and regional agencies and the local community. Our work is widely publicized in local media and through Conservancy partners' outreach programs.

Past CALFED funding for the Conservancy has been handled by SSCRCD. For the sake of sharing the burden and recognition of administrator, SEC is lead applicant and fiscal agent on this project. Funding for partners will be allocated by SEC, who will be accountable for products and deliverables to CALFED. SEC has administered 10 years of projects funded by CALFED, RWQCB, CDFG, DWR, and others. SEC's current budget is in excess of $1.5 million. Conservancy partners will continue to meet bi-monthly or more often to assure continuity and communication among Conservancy tasks.

2b. Technical

The Conservancy assures a broad-based, informed ecosystem approach to watershed restoration through joint meetings with its diverse partners, technical advisors, and agency personnel, and through continual information gathering from conferences, literature, and organizations in other watersheds. We have expertise on staffs and advisory boards in hydrology, fisheries, geomorphology, GIS and GPS, water quality, erosion and geology, viticultural practices, group facilitation, riparian ecology, and restoration implementation. Technical professionals inside and outside the Conservancy have been engaged with the ecological issues facing the Sonoma Creek watershed and San Pablo Bay for years. This long-term information base, plus the input of experts, assures the fundamental soundness of the Conservancy's approach. Specifically, we have guidance and support from the City and County of Sonoma, Sonoma Valley Chamber of Commerce, EPA Region IX, RWQCB, CA DFG, US Army Corps of Engineers, and others.

Alternatives for watershed restoration were discussed and evaluated during development of the Sonoma Creek Watershed Enhancement Plan, and they continue to be discussed by SEC's Technical Advisory Committee and at Watershed Conservancy meetings. Scientists among Conservancy and its collaborators provide QA/QC and data evaluation. Data synthesis and analysis are compatible with agency requirements. Year-end reports are produced and distributed to interested parties. The SEC's TAC and associates review any QAPPs, project designs, data analyses, and reports before final versions are approved. Data is used to adaptively manage restoration efforts and to educate community members about our watershed and impacts we have on it.

All Conservancy work is done with willing landowners. Conservancy partners have developed respectful yet reasonably efficient methods of gaining access to sites, particularly streambanks. The generally high public opinion of Conservancy partners eases this process.

2c. Previous Projects

SEC, RCD, and SCAAW have each successfully completed tasks similar to most of those in this proposal. See 4a and 8 for more details. The programs that Task 2 applies to—community-led TMDL development and flood reduction planning—are new for the Conservancy and to some degree for the agencies involved.

3. Budget

3a. Cost Effectiveness of Approach

In the whole CALFED solution area, Sonoma Creek is one of the most cost-effective areas in which to invest restoration dollars, because it is relatively healthy (R. Leidy, EPA, see support letter). The Conservancy, with its established technical capacity and public support, can accomplish restoration, assessment, and education at lower cost than agencies can. Because the Conservancy already has broad-based buy-in from the community, our work is well-received and maintained.

3b. Cost Sharing

Contributions from volunteers, interns, landowners, and local scientists are considerable in Sonoma Valley, decreasing the costs of stake-holder-supported watershed activities. In addition, each Conservancy partner brings considerable cost sharing to the project. The table below lists funds that are expected to be available as cost share when this project begins, approximately January 2002. These amounts are reflected in the budget form.

	Contributor	Source	Amount	Status
Task 1	SEC	memberships, donations, other grants	40,000	expected
Task 2	SVVGA	dues	90,000	expected
	SEC	EPA Region IX	13,000	committed
	SEC	volunteers, in-kind expertise	5,000	expected
	SSCRCD	Army Corps of Engineers	100,000	committed
	SSCRCD	California Coastal Conservancy	60,000	committed
	Conservancy	Proposition 13 (SWRCB)	250,000	will apply 2001
Task 3	SEC	DFG or Sonoma County Water Agency	20,000	will apply 2001
Task 4	SCAAW	DFG	22,000	committed
Task 7	SEC	City of Sonoma	10,000	committed
	SEC	volunteers, in-kind expertise	5,000	expected
Total:			615,000	

3c. Budget Request

See budget form at the end of this proposal narrative.

WE PREFER THAT FUNDING EXTEND FOR THREE FULL YEARS. If the total request will not be funded, we ask that CALFED retain the three-year timeline and consult with us to eliminate individual tasks. Task 2—public outreach, education, and participation—is our highest priority.

4. Project Technical Feasibility

4a. Similarity To Previous Projects

Conservancy partners have each successfully completed projects similar to those in this proposal. All Conservancy work is done with willing landowners. Conservancy partners have invested thought and effort into developing respectful yet reasonably efficient methods of gaining access to sites, particularly streambanks. The generally high public opinion of Conservancy partners eases this process. Our experience and background for each task are as follows:

Task 2: Sonoma Creek Watershed Enhancement Plan (1997); funded by RWQCB; required extensive community outreach and facilitation. City of Sonoma General Plan Environment and Resources Element (1992-6); required extensive community outreach and facilitation.

Task 3: The Conservancy has not done fish population studies. However, Entrix, Inc. will be our consultant for this task. Their staff has extensive experience with studies of this type. See 5d for specifics. The study will be done in consultation with DFG and NMFS personnel, with whom the Conservancy has previously collaborated. This task will require access to many private parcels. See comment about access under 4a above.

Task 4: We have been bringing the Adopt-A-Watershed curriculum and other environmental education services to classroom teachers in Sonoma Valley since 1993.

Task 5: SEC and SSCRCD have been actively planning and funding fish barrier repairs projects for several years, including barriers on Asbury, Rodgers, Carriger, Stuart, Sonoma, and Nathanson Creeks.

Task 6: SSCRCD and SEC both have experience in stream channel restoration design and planning, including projects at several sites on mainstem Sonoma Creek. SFEI has employed their respected Watershed Science Approach in numerous watersheds around the Bay Area, including a preliminary study in Carriger Creek.

Task 7: SSCRCD and SEC both have experience in stream channel restoration design and planning, including projects at several sites on mainstem Sonoma Creek. In addition, the proposed restoration plan for Nathanson Creek will build on many years of planning discussions on the part of SEC, the City of Sonoma, and the Nathanson Creek Task Force.

Task 8: We have made many presentations to local community groups, local governments, regional agencies, and CALFED bodies about our work. SEC's GIS capacity enables these presentations to be particularly vivid.

4b. Knowledge to be Gained

Community-led TMDLs are rare, if not brand new, in the West. The lessons learned through our community's involvement will benefit other watershed communities wishing to steer their own TMDL process. The process of coming to agreement on difficult issues—such as data handling, privacy concerns, trust between interest groups, and fair representation—will be documented in meeting minutes, reports, and newsletter articles, as well as in a planned memorandum of understanding between RWQCB and an expanded Conservancy.

To our knowledge, there has never been a fish population study in Sonoma Valley. The new knowledge gained via Task 3 will be immediately useful in ways described in 5e. Its results will also shed light on probable fishery conditions in the Napa River and other less-developed Bay Area streams. It will provide a much-needed baseline for most future watershed work, because much of this work uses steelhead as its indicator species.

From its beginnings, the Conservancy has served as a model of how collaborations across traditional interest groups can accomplish changes in attitudes, knowledge, and on-the-ground conditions. Through our continued commitment to working with each other and communicating with other groups, we inform both the scientific and community-building aspects of watershed improvement.

4c. Project Durability

Task 3, the fish population study, will require one year of funding after this project ends. All other tasks are either ongoing by nature, or will move into different phases after this project ends. See table in 8 for the temporal context of proposed tasks.

5. Project Monitoring

5a. Performance Measures

No earth-moving, planting, or other physical implementation is proposed for this project, so no restoration success monitoring is planned. For many proposed tasks, unequivocal measures of success are difficult to name; in these cases we will use proxies such as attendance at meetings or statements of confidence in the program by participants.

Task 2: numbers of articles in local press; attendance at scoping and development meetings; community taking lead role in developing and implementing TMDL; statements of confidence in the TMDL and Corps process by Conservancy members and representative stakeholders.

Task 3: interim report and map.

Task 4: number of children attending SCAAW events; number of teachers assisted.

Task 5-7: restoration plans; engineering drawings; permits; statements of confidence in the planning process by key participants and landowners.

5b. Coordination of Monitoring

The Conservancy and SEC have an ongoing commitment to sharing data and successful approaches with the local and regional watershed community. Regionally, the process that Sonoma Valley goes through to develop community-led TMDLs will be a model for many other watersheds in the West. We communicate regarding the process of collaboration in local and regional workgroups, conferences, and meetings. For example, SSCRCD and SEC are on the Creeks Committee of the San Francisco Bay Joint Venture and the TAC of the Wild on Watersheds program (CA Association of RCDs, SWRCB). SEC has been a constant participant in CALFED's Watershed Workgroup since its inception.

Locally, we disseminate planning, monitoring, and research results via websites, particularly SEC's at www.sonomaecologycenter.org, the press, the Conservancy newsletter "Creek Currents" (550 recipients), and SEC's newsletter (450 recipients). Many of the proposed tasks have large components emphasizing educating Sonoma Valley's population (40,000). SEC has programs for volunteers (currently approximately 60/year) and university interns (12/year), which teach ecological concepts, watershed issues and stewardship, and fisheries science through hands-on monitoring, restoration, and research. All partners create materials for various sectors of the public and also conduct landowner outreach through newsletters, "awareness days," and short courses on timely topics. Many materials (such as SSCRCD's Creek Care Guide) are in English and Spanish.

5c. Citizen Monitoring

We expect to train and employ local citizens in the fieldwork and landowner access activities of Task 3, the steelhead population assessment. Some citizens may be Stream Stewards, the volunteer monitors trained at SEC's Sonoma Valley Watershed Station. The Stream Stewards program began with 1998 CALFED funding, and has been collecting peak flow, rainfall, and benthic macroinvertebrate data since then. There are now approximately 25 Stream Stewards throughout the watershed. Long- time local volunteers will be indispensable in Task 7, developing a restoration plan for Nathanson Creek Preserve and Trailway.

5d. Monitoring Protocols

Task 3, the fish population assessment, is the only task requiring detailed monitoring protocols. Entrix, Inc., of Walnut Creek will be the Conservancy's consultant on this task. Activities will include site selection based on DFG fish habitat typing, multiple-pass electrofishing in the fall at representative habitat sites, possibly snorkeling, and data analysis to determine presence/absence, abundance, and size and age distribution. These techniques will be similar to those used by Entrix, Inc., in Alameda Creek and Los Trancos Creek near Stanford University, which were approved by memoranda of agreement with DFG. Any data collection protocols, QAPPs, data analysis, and draft reports will be reviewed by SEC Technical Advisory Committee members, qualified professionals, and appropriate agencies. Data will be evaluated in conjunction with publications about similar projects and appropriate agency guidelines to determine how to interpret the results.

Qualitative and quantitative data from assessments will be placed into a database integrated with GIS layers compiled by SEC. Data may also be stored by individual Conservancy partners. Data, results, and interpretation are disseminated by final or yearly reports to interested parties. To the degree that is legal, we will respect the wishes of landowners who request anonymity.

5e. Applications of Monitoring Data

Data from Conservancy tasks is used to adaptively manage restoration efforts, and to educate community members about our watershed and impacts we have on it. Task 3 is the only task that will produce quantifiable monitoring data.

The data from Task 3 will be immediately effective in a number of applications. These include efforts to prioritize and fund land acquisition and restoration, efforts to gradually improve land use practices, and adaptive management of the watershed ecosystem.

For example, the Sonoma County Agricultural Preservation and Open Space District is one of the most active such districts in the country. Its acquisition priorities derive in large part from a GIS-driven database containing information about multiple natural resources. Sonoma Valley's value for steelhead habitat has always been under-represented in the database, and Task 3 will provide reliable data that will effectively elevate Sonoma Valley's importance in the District's decision-making.

Another application of Task 3's data involves local government practices. Sonoma County is evaluating its practices in land management and permitting, to ensure they do not conflict with NMFS' recent listing of central California's coastal steelhead populations. One of the County's first tasks is to ascertain where steelhead populations are, typically using existing insufficient data. Task 3 will provide far superior data for Sonoma Valley, which will result in more appropriate County management of the Valley's steelhead streams.

A third application of Task 3's data is in SEC's continuing analysis of factors limiting steelhead populations. This analysis is detailed in Section 6. Information on the distribution of steelhead generated by Task 3 will allow us to model the effects of watershed conditions on steelhead numbers and population health.

6. Scientific Basis of Proposed Tasks

6a. Current Watershed Assessments

Several recent sources of quantitative information inform our choice of the proposed tasks.

- The Sonoma Creek Watershed Enhancement Plan (1997) identified land use practices and public awareness as areas needing improvement, and steelhead and riparian areas as particular restoration targets.
- A 1996 assessment of fish habitat quality in the upper watershed, using DFG habitat typing protocols, highlighted generally good conditions, with a possibly limiting lack of pool habitat.
- A study spanning several years in the 1990's by Rob Leidy at EPA examined fishery diversity in streams around the Bay Area. His results showed that Sonoma Creek had a remarkable number of native fish species and no non-native species.
- SFEI led a Watershed Science Approach preliminary assessment of Carriger Creek in 2000, which supports the proposed Task 6.
- SEC's Sonoma Valley Watershed Station and its Technical Advisory Committee assessed research needs in the Valley in the Watershed Station Work Plan (1997, updated 2000) and initiated a systematic examination of factors that may be limiting steelhead populations in the watershed. Since then SEC has completed a study of summertime water temperatures and a spawning gravels suitability analysis. Neither of these factors appears to be limiting, at least on its own. SEC has moved on to researching other possible limiting factors, including summer water levels, benthic macroinvertebrates, fish habitat quality.

6b. Previous Watershed Assessments

Several non-quantitative sources of information, some of them now old, also inform our choice of the proposed tasks.

- The Army Corps of Engineers flood reduction and restoration project in the lower watershed, which drives part of the need for Task 2, is based on decades of observations of the flood regime by local farmers and ranchers, and on 30 years of technical consulting to landowners in the area by Paul Sheffer of SSCRCD.
- Sonoma Creek once had an internationally known steelhead fishery, but land use impacts are believed to have greatly diminished the local population. SEC's Oral History project is adding to the anecdotal evidence of abundant steelhead and possibly chinook.
- Our current understanding of where steelhead populations are, and which barriers are limiting access to habitat areas, is based on the professional judgement of Bill Cox at DFG and local long-time observers, including Conservancy staff and advisors. For example, Task 7, planning for the restoration of an urban reach of Nathanson Creek, is predicated on the degraded condition of the project reach and the observation of young steelhead above it. Hence the site's selection as a high priority for fishery restoration, in addition to its value for education and urban recreation.
- The watershed is listed as impaired by sediment, nutrients, and pathogens (SWRCB's 303(d) list). The listing is based on professional judgement, not data, and may be outdated. For example, the pathogens listing may have resulted from overflow from sewage treatment systems that were replaced by an improved treatment plant.
- Here as elsewhere in the CALFED area, "[t]here is great scientific uncertainty as to why this at-risk species [steelhead] is in decline and how to best proceed with actions to facilitate recovery of this and other species."(ERP Goal 1). "The major factor limiting steelhead populations in streams are migration barriers and agricultural development including water diversion, barriers due to diversion dams, high water temperatures and other water quality impacts from urban and agricultural runoff" (p. 126).

6c. Scientific Assumptions

Some proposed tasks address unknowns, and therefore make no assumptions, such as Tasks 1 and 3. Tasks 5, 6, and 7 make the assumption that the project sites do indeed limit those streams' steelhead populations. These assumptions are based largely on professional judgement and long-term observation, as detailed above, because quantitative surveys of fish populations or habitat quality have not been made in those reaches. In the case of Carriger Creek, Task 6, we also make the assumption, based on SFEI's assessments, that the channel's instability will propagate laterally and possibly up- and down-stream if not repaired.

6d. Consistency of Project with Scientific Assumptions

We have a satisfactory level of certainty about the underlying assumptions of Tasks 5-7. Staff and others have confirmed the presence of steelhead and steelhead habitat upstream of the sites. These restoration sites were chosen for their direct benefit to salmonids in the Sonoma Creek watershed. The Carriger and Nathanson sites also are highly visible to the public. Restoration practices will be drawn from standard sources, such as the Salmonid Stream Habitat Restoration Manual (California Department of Fish and Game).

6e. Baseline Knowledge

6a through 6c show how this project developed out of our current knowledge of watershed conditions and needs. These tasks are based on long-term observation and technical work in Sonoma Valley, on the part of Conservancy staff and watershed residents.

- Task 2 grew out of the long-term observations and concerns about flooding on the part of lower watershed residents and exhaustive knowledge of the lower watershed on the part of SSCRCD's Paul Sheffer. This task is also driven by the assumptions that led to Sonoma Creek's placement on the 303(d) list.
- Task 3 grew out of decades of observation of the fishery on the part of DFG and local scientists and naturalists. Task 3 will generate far better baseline knowledge than we currently have regarding the watershed's fishery. See 5e for more information.
- Task 5 is predicated on site familiarity on the part of SSCRCD and the landowner.
- Task 6 is based on SFEI's assessment, landowner input, and Conservancy staff's familiarity with the site.
- Task 7 is built on 6 years of familiarity with the site and its many public and private landowners, on the part of SEC staff and the Nathanson Creek Task Force.

7. Relationship to CALFED

7a. Addressing Multiple CALFED Objectives

Watershed conditions in the North Bay contribute to the function of the Bay-Delta ecosystem, because this area is a bottleneck. According to the ERP vol.2, "All Central Valley anadromous fish pass through the North Bay and depend on the North Bay and marshes for some critical part of their life cycle." Directing resources to relatively healthy watersheds, particularly those in the North Bay, is a highly efficient way to leverage limited funding for maximum benefit to the entire CALFED area (Robert Leidy, EPA, speech at 1999 State of the Estuary Conference, San Francisco). In addition, most North Bay streams are undammed; they deliver water to the Bay-Delta directly, without the complexities of water management in the Delta. Funding efforts that maintain the vitality of the North Bay helps Central Valley fisheries by keeping excess sediment and other pollutants out of San Pablo Bay, providing a natural hydrograph, and providing monitoring data in these reference watersheds to improve watershed management throughout the region.

This proposal complements CALFED Water Quality Program goals by improving the quality of inflows to San Pablo Bay, benefiting all organisms living in and passing through the North Bay. It addresses water quality concerns at their source. It encourages the use of BMPs, promotes sediment reduction in construction areas and

urban stormwater, begins implementation of stream restoration and revegetation work, supports quantifying ecological impacts of sediments in target watersheds.

This proposal supports Ecosystem Restoration Program Stage 1 objectives including restoring tidal, riparian, aquatic, seasonal wetland habitats; implementing projects on selected streams to provide additional upstream fishery habitat by removing or modifying barriers; providing incremental improvements in ecosystem values throughout the Bay-Delta system; pursuing actions that are opportunity-based (willing sellers, funding, permitting, etc.); providing incremental improvements on private land through incentives, developing partnerships with farmers on "environmentally friendly" agricultural practices. Tasks 2 and 5-7 help achieve several ERP goals and benefit many target species.

- At-Risk Species. For Sonoma Valley, proposed tasks target non-oceanic life stages of steelhead, and California freshwater shrimp. For the Bay-Delta, tasks benefit all species and life-stages using the San Pablo Bay. Proposed tasks will create durable improvements to habitats and populations of at-risk species, and "resolve conflicts between water management/land use and listed species."
- Ecosystem Processes. Both in the near term and over the long term, proposed tasks will provide more natural sediment, water, and nutrient supplies to the San Pablo Bay and to streams in Sonoma Creek watershed. If the San Pablo Bay's role as nursery and feeding ground is to be maximized, habitat and water quality conditions in the San Pablo Bay watershed must be maintained and improved. Ecological factors having the greatest influence on North Bay and marsh fish and wildlife include freshwater inflow from rivers, wetlands, riparian vegetation, and aquatic habitat diversity. Improving ecosystem processes helps reverse downward population trends of native riparian and aquatic species that are not yet listed, and prevent establishment of non-native species.
- Habitats. Proposed tasks will improve three habitats: Aquatic riverine habitat: pool structure, wood and sediment inputs, and habitat connectivity. Riparian habitat: conditions assessment to guide future restoration of functional connectivity. Aquatic food web in San Pablo Bay: improving sediment, water, and nutrient inputs and timing.
- Sediment and Water Quality. Proposed tasks will increase awareness of urban and agricultural effects on water quality, improve land use practices to reduce sedimentation, water temperatures, and water diversions.

7b. Defining relationships between watershed processes (including human elements), watershed management, and the primary goals and objectives of CALFED

This proposal mimics the approach needed to achieve CALFED's goals. It seeks to build successful and durable solutions to pressing water-related problems, bringing together diverse interests distributed throughout a physically and socially complex watershed system. Solutions of this type, devised at the local watershed scale and applied at a broader scale, will contribute to solutions of programmatic interest to CALFED (water delivery, levee integrity, ecosystem restoration).

In Sonoma Creek as in most of the CALFED area, property is overwhelmingly privately owned, and problems are non-point and cross jurisidictional boundaries. Therefore, projects like this one are needed to address the cumulative effects of thousands of non-point actions, through education, outreach, and site-specific restorative actions. To be effective, CALFED must use community-wide approaches to reach the people who determine how land and water are used. In our case, these are largely private landowners, local planning departments, grape-growers, construction companies, etc.

Continued funding by CALFED will increase the number of residents in Sonoma Valley and the North Bay who see the relation between the health of Sonoma Creek and the health of the Bay-Delta, who value the role of CALFED in supporting community alliances, and who take an interest in state- and region-wide watershed issues.

The Conservancy has a long-standing partnership with the CALFED program, which will be strengthened by the proposed work. CALFED has funded various projects of the Conservancy since 1997, and SEC has been a constant participant in CALFED's Watershed Workgroup since its inception. The Conservancy's strength, from CALFED's point of view, is that we are a solid, diverse collaboration across traditional interest group lines, working in a watershed whose health directly affects the many at-risk anadromous species that pass through San Pablo Bay. Continued funding by CALFED will increase the number of residents in Sonoma Valley and the North Bay who see the relation between the health of Sonoma Creek and the health of the Bay-Delta, who value the role of CALFED in supporting community alliances, and who take an interest in state- and region-wide watershed issues.

7c. Environmental Compliance

The lead agency identified for environmental compliance at this point is DWR. Of the proposed tasks, only Task 3 requires permits. The other tasks either are not related to physical on-the-ground work, or are planning and permitting phases only.

There are no obstacles foreseen that will hinder implementation of any element of this proposal.

We have verbally stated cooperation of landowners for the Carriger, Rodgers, and Nathanson Creeks tasks. All projects in this proposal have had preliminary site analysis and are ready for funding. No permits have been obtained at this point. Tasks 5-7 include both developing detailed plans and obtaining permits and written landowner permissions that are specifically consistent with those plans. Tasks 5-7 may require permits from DFG whose 1603 permit is CEQA-compliant. Other permits that may need to be obtained are ACOE Nationwide permit 27, CWA 404, Sonoma County Grading Permit, and Section 7 consultation with NMFS. NMFS and CDFG will be closely involved with appropriate projects.

8. Other

SEC, the applicant, will comply with standard contract terms and conditions described in Section 8 of the PSP.

Because most of the proposed tasks constitute phases of long-term projects, it is useful to show how the proposed tasks relate to over-arching topics being addressed by the Sonoma Creek Watershed Conservancy. The table below provides this context.

Context of proposed tasks in relation to past and future activities by Conservancy partners. Underlined text indicates proposed activities. Italicized text indicates past or future CALFED-funded activities.

Topics Addressed by Tasks	**1999 or before**	**2000**	**2001**	***2002***	***2003***	***2004***	**2005**	**2006**
Water quality improvement (TMDL development)	sediment production analysis at Annadel St. Park	sediment production analysis at Annadel St. Park	MOU w/ RWQCB, sediment production analysis, community outreach & input	*community outreach & input*, monitor sediment loads, sediment production analysis	*community outreach & input*, monitor sediment loads, sediment production analysis	*community outreach & input*, monitor sediment loads, sediment production analysis, allocate loads	develop specific land use measures, continue monitoring sediment loads	develop specific land use measures, continue monitoring sediment loads
Flooding reduction in lower watershed	meetings w/ landowners began 1980's	meetings w/ Corps & landowners	planning meetings w/ partners, feasibility phase agreement	data collection, *community outreach & input*, modeling	data collection, *community outreach & input*, modeling	data collection, *community outreach & input*, modeling	data collection, community outreach & input, alternatives planning	data collection, community outreach & input, alternatives planning
Environmental education in schools	SCAAW began, 1993	*provide services to teachers*	*provide services to teachers*	*provide services to teachers*	*provide services to teachers*	*provide services to teachers*	provide services to teachers	provide services to teachers
Fishery studies	DFG habitat assess't in upper watershed, 1996	begin planning population study	develop study plan, begin DFG habitat assess't in lower watershed	*population study*, DFG habitat assess't in lower watershed	*population study*, DFG habitat assess't in lower watershed	population study continues, prioritize management actions	prioritize management actions, seek funding for actions	prioritize management actions, seek funding for actions
Fish barriers	*plan Asbury Ck site*	*plan Asbury Ck site*, plan Larson Park site	*implement Asbury Ck site*, scope Rodgers Ck site	*plan Rodgers site*, plan Larson Park site, *monitor Asbury*	*plan Rodgers site*, Larson Park implementation , *monitor sites*	*plan Rodgers site*, seek implementation funding, *monitor sites*	continue to prioritize and repair passage barriers, monitor sites	continue to prioritize and repair passage barriers, monitor sites
Stream channel restoration	planning & acquisition for Nathanson Ck began 1994, *Carriger Ck assessment*	*Carriger assessment*, community input on Nathanson restoration	discuss restoration strategies for Nathanson & *Carriger*	*collect data, draft plans, permitting*	*collect data, draft plans, permitting*	*draft plans, permitting*, seek implementation funding	begin phased implementation, begin monitoring	continue implementation & monitoring

	Task Description	Rate	Hours	15% Benefits	Labor	Supplies	Materials	Subcontract	Match	CALFED	Total
Task 7	**Nathanson Creek Preserve and Trailway---SEC**				24,768		250		15,000	25,018	40,018
	City funds for this task								10,000		
	Year 1				8,932				2,500	8,932	11,432
	Executive Director	38.25	40	230	1,760						
	Assistant Director	34.00	40	204	1,564						
	Biologist	34.00	120	612	4,692						
	Restoration Tech.	31.88	25	120	917						
	volunteers	10.00	250						2,500		
	Year 2				8,859		75		2,500	8,934	11,434
	Executive Director	38.25	35	201	1,540						
	Assistant Director	34.00	35	179	1,369						
	Biologist	34.00	120	612	4,692						
	GIS Technician	29.75	10	45	342						
	Restoration Tech.	31.88	25	120	917						
	volunteers	10.00	250						2,500		
	Year 3				6,977		175			7,152	7,152
	Executive Director	38.25	30	172	1,320						
	Assistant Director	34.00	30	153	1,173						
	Biologist	34.00	60	306	2,346						
	Restoration Tech.	31.88	35	167	1,283						
	GIS Technician	29.75	25	112	855						
Task 8	**Reporting and presentations---SEC**				9,076		1,000			10,076	10,076
	Year 1				2,626					2,626	2,626
	Admin. Assistant	27.63	30	124	953						
	Executive Director	38.75	20	116	891						
	Project Manager	34.00	20	102	782						
	Year 2				2,309					2,309	2,309
	Admin. Assistant	27.63	20	83	635						
	Executive Director	38.75	20	116	891						
	Project Manager	34.00	20	102	782						
	Year 3				4,141		1,000			5,141	5,141
	Admin. Assistant	27.63	25	104	794						
	Executive Director	38.75	40	233	1,783						
	Project Manager	34.00	40	204	1,564						
	GIS Technician	29.75	30	134	1,026						